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# CGT Curtailment/Diversion Presentation

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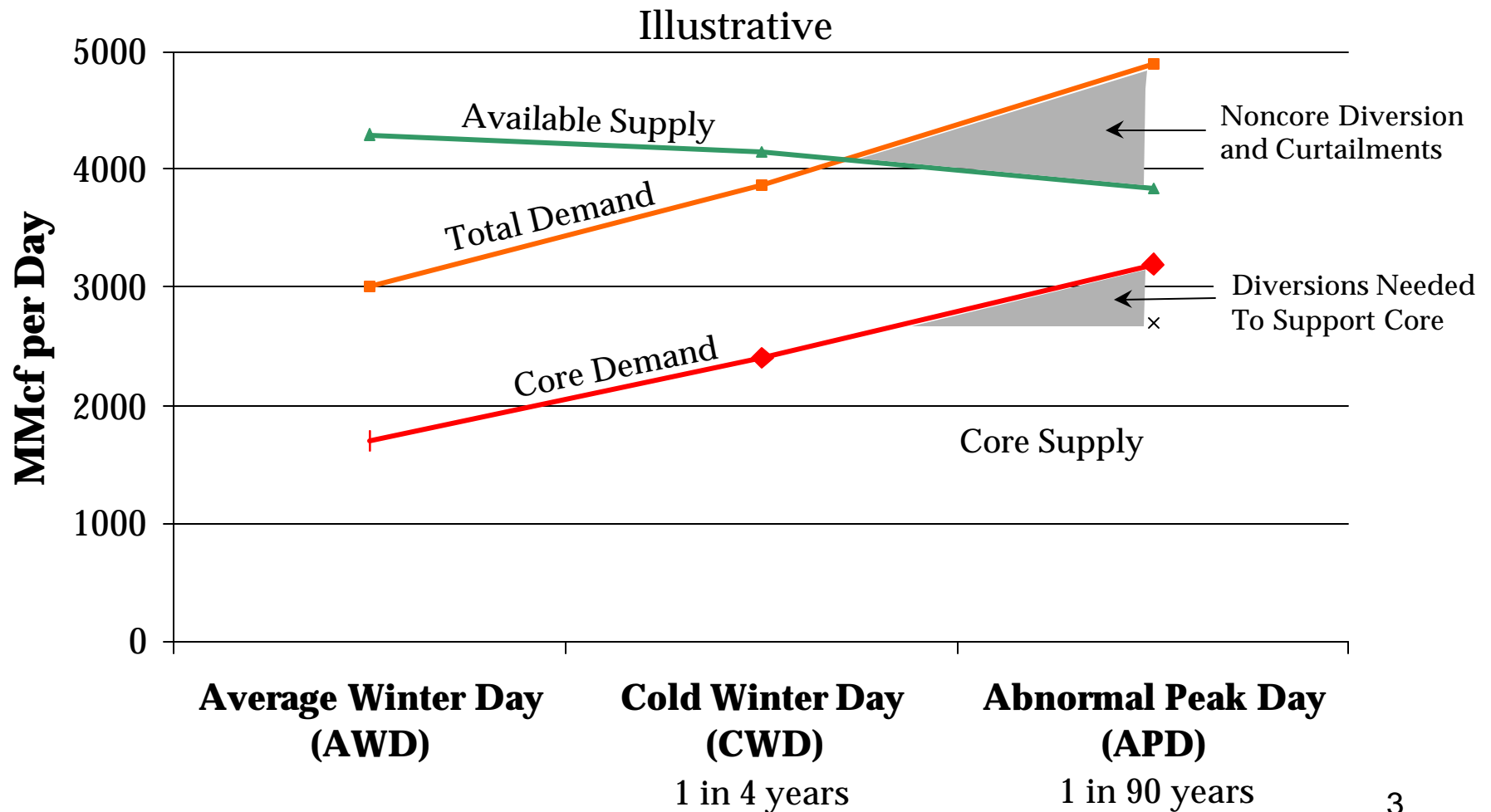
# Curtailment Drivers

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- Gas demands > Available gas supply, and/or gas system capacity
- High Gas Demand
  - Extreme cold weather core demands
  - Extreme demand for gas-fired electric generation, without matching supply
- Loss of Supply
  - Pipeline outages, e.g., ruptures
  - Supply or capacity shortages



# Supply-Demand Picture in 2000





# PG&E Gas System Operating Objectives

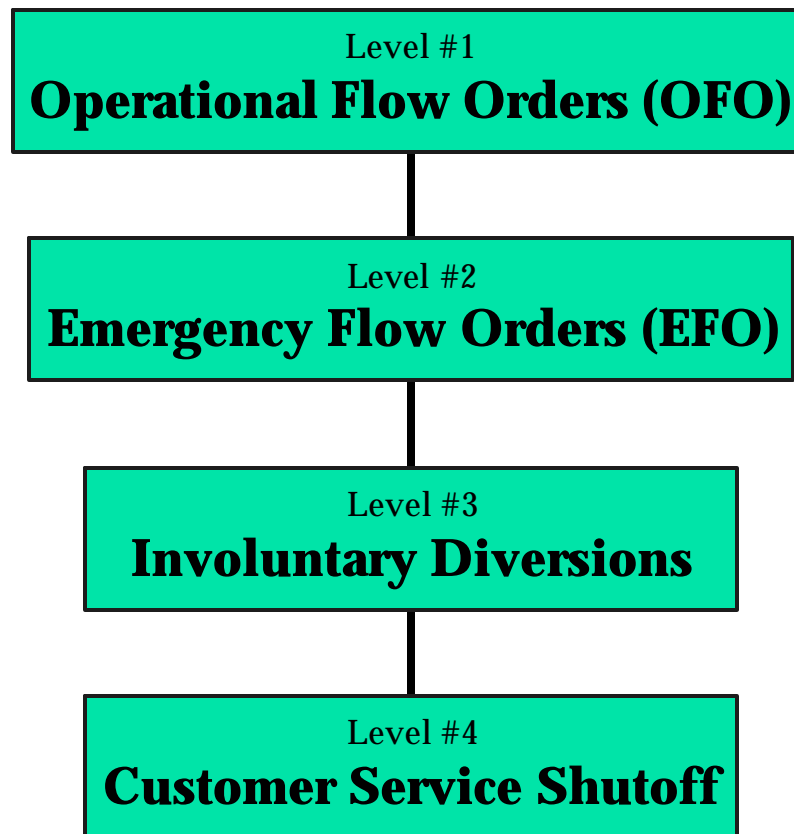
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- Maintain a safe, controlled operation of the pipeline
- Protect and provide reliable supplies to the Core End-Use Customers
- Operate within the parameters of Gas Rule 14
  - Includes provisions for PG&E to impose four levels of protection to ensure system reliability
- PG&E's current rules approved by CPUC as part of Gas Accord in D.97-08-055



# System Protection Levels

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# Operational Flow Orders (OFO)

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- Daily balancing requirement, within a given tolerance level: 0 to 25%
- Used to maintain safe, controlled operation of pipeline
- Issued when pipeline inventory is forecast to be outside pre-defined pipeline inventory limits
- Noncompliance charge: \$0.25 to \$25.00/Dth



# Emergency Flow Orders (EFO)

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- EFO requires exact daily balancing; zero tolerance
- Used when deliveries to end-use customers are threatened due to supply and/or capacity shortages
- EFO Noncompliance charge: \$50/Dth



# Involuntary Diversions

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- EFO in effect with exact daily balancing requirement; zero tolerance
- Used when core market supplies are insufficient to meet the forecast demand
- Diversion of noncore gas supplies to core customers (includes power plants)
- Two charges: \$50/Dth EFO Noncompliance, and \$50/Dth Diversion charge



# Sequence of Diversions

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- First: As-available on and off-system transportation supplies
  - From lowest to highest contract price
  - Pro rata for same price contracts
- Next: Firm on-system transportation supplies
  - Pro rata across all contracts
- Last - Storage withdrawal supplies
  - Pro rata across all withdrawals



# Customer Service Shutoff

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- PG&E can temporarily shutoff service at the noncore customer meter (includes power plants) for noncompliance with an EFO or Involuntary Diversions
- Noncompliance charges may not provide adequate economic incentive for electric generators to shut down
  - When power prices are high, or
  - When generators are allowed to “pass through” penalties to ISO



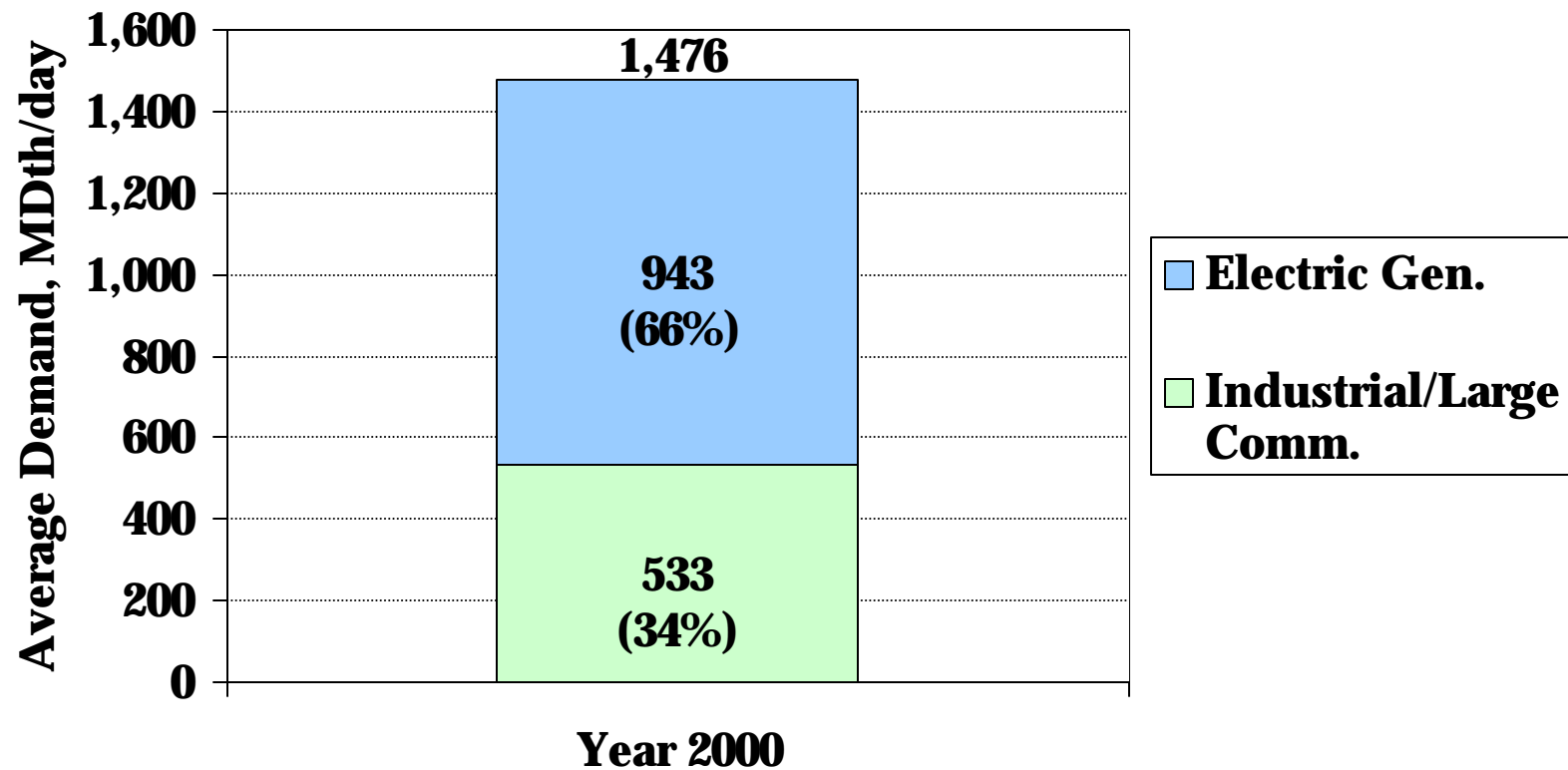
# Noncore Market Issues

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- Noncore customers no longer required to maintain alternate fuel back-up
  - Shut down of business and loss of profits
- The non-electric generation portion of the noncore market is relatively small
  - Supply available for diversion could be limited



# PG&E Noncore Demands





## Noncore Market Issues, cont'd.

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- Gas-fired electric generation diversions would be likely and would reduce electric generation
  - Lack of back-up fuel supply
  - Ability to replace electric energy with purchases from out-of-area generators
  - Directing limited gas to power plants that ISO wants running



# Customer Impacts

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- Electric blackouts affecting residential customers would counteract the intent of diversions to maintain core gas service, i.e., without power, gas furnaces are useless
- Noncore gas outages and electric system blackouts could result in significant economic consequences/loss



# Options to Avoid Curtailments

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- Additional peaking supplies
  - PG&E and/or third-party gas storage; would likely require central backbone gas transmission reinforcements
  - Added pipeline capacity and supply may be needed
- Alternate fuel back-up for noncore
  - Would mitigate impact of diversions
- Conservation programs
- Economic cost/benefit needs to be assessed



# Conclusion

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- Some form of back-up fuel supply may be necessary and/or economic for electric generators
- PG&E's gas system is not currently designed to provide firm service to both core and noncore, including electric generation
- Additional capital investment is necessary to increase gas reliability or to provide an alternate fuel supply